Claim 69 (amended) A process according to claim 67, wherein the gene coding for trehalose synthesizing enzyme is an E. coli gene.

REMARKS

The Official Action of April 9, 2003 has been carefully considered and reconsideration of the application as amended is respectfully requested.

The indicated allowability of claim 68 if rewritten in independent form, including all of the limitations of the base claim and any intervening claims, has been noted with appreciation. Applicants have now inserted the pertinent limitations from claim 68 into independent claim 35. Claims 36, 66 and 68 have now been cancelled to eliminate redundant recitations. The claims formerly dependent on claim 36 have been made dependent on claim 35.

It is respectfully submitted that the sole remaining rejections of the claims under 35 USC 112, first paragraph, have been overcome by the incorporation in these claims of recitations, corresponding to recitations formerly in claim 68, which limit the claims to methods for producing trehalose in plants transformed with a bacterial or fungal gene. (Please note that claim 25 has been limited to plants transformed with a yeast gene in accordance with the description in the specification at page 9, lines 24-25.) Accordingly, it is respectfully believed that claims are now in allowable form.

In view of the above, an early and favorable reconsideration of the application

as amended is respectfully requested. The Examiner is courteously invited to telephone the undersigned to discuss any and all issues that are raised by the submission of this paper if he believes that such discussion would expedite an allowance of this application.

Respectfully submitted,

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Claim 25 (amended) A process for accumulating trehalose in cells of a plant, said plant cells having a trehalase activity and having been genetically altered so as to contain a yeast gene coding for a bipartite [trehalase] trehalose synthesizing enzyme that is expressed in said plant cells with resultant production of trehalose in the plant cells, said process comprising inhibiting the trehalase activity by [(a)] exogenously administering to the plant a trehalase inhibitor in an effective amount to inhibit the trehalase activity sufficiently to allow or increase an accumulation of trehalose in the plant cells[, or (b) transforming the plant cells with a DNA sequence encoding the trehalase inhibitor so as to cause expression of the trehalase inhibitor in the plant cells in an effective amount to inhibit the trehalase activity sufficiently to allow or increase an accumulation of the trehalose in the plant cells].

Claim 35 (thrice amended) In a process for producing trehalose in plant cells, plants or parts thereof, wherein the plants [naturally synthesize trehalose or] are genetically altered to synthesize trehalose so as to contain a gene coding for a trehalose synthesizing enzyme, said gene coding for the trehalose synthesizing enzyme being a bacterial or fungal gene coding for trehalose phosphate synthase, said plants naturally comprising an endogenous trehalase activity, the improvement comprising:

(a) inhibiting the endogenous trehalase activity in the plants or parts thereof and cultivating the plants to allow an accumulation of trehalose in the plants or parts thereof, said inhibiting comprising cultivation the plant or parts thereof in the presence of a chemical trehalase inhibitor; and

(b) screening for a plant or a plant part having a level of trehalose that is increased as a result of said inhibiting.

Claim 39 (amended) A process according to claim [36] 35 ,wherein the plants are *Solanum tuberosum* plants.

Claim 41 (amended) A process according to claim [36] 35, wherein said trehalase inhibitor comprises validamycin A in a form suitable for uptake by said plants or parts thereof.

Claim 49 (amended) A process according to claim [36] 35, wherein the trehalose inhibitor is selected from the group consisting of: validamycin A, trehazolin produced in Micromonospora, strain SANK 62390, validoxylamine A, validoxylamine B, validoxylamine G, D-gluco-Dihydrovalidoxtylamine A, L-ido-Dihydrovalidoxylamin A, Deoxynojirimycin, 5-epi-trehazolin, castanospermin and the 86KDa protein from *periplaneta americana.*

Claim 59 (amended) A process according to claim [36] 35, wherein the trehalase inhibitor comprises validamycin A in an amount between 100 mM and 10 mM in aqueous solution.

Claim 67 (amended) A process according to claim 35 [66], wherein the gene coding for trehalose synthesizing enzyme is a yeast gene [plant gene, a bacterial gene or a

fungal gene].

Claim 69 (amended) A process according to claim [67] 35, wherein the gene coding for trehalose synthesizing enzyme is an E. coli gene [a plant gene coding for trehalose phosphate synthase].